Minimization and Mitigation Measures for Timber Operations

in Watersheds with Listed Anadromous Salmonids

New Language

~~Proposed Deletions~~

Amend 14 CCR § 895.1. Definitions

The definitions contained in the Z'berg-Nejedly Forest Practice Act of 1973 as amended (commencing with Section 4511 of the Public Resources Code) shall apply to this chapter, as well as the following definitions, unless the context clearly requires otherwise.

Confidential Archaeological Letter means . . . .

Connected Headwall Swale means a geomorphic feature consisting of a concave depression, with convergent slopes typically of 65 percent or greater, that is connected to a watercourse or lake by way of a continuous linear depression. A linear depression interrupted by a landslide deposit is considered to be continuous.

Countable Tree see 4528(b).

Harvesting Method means . . . .

Hydrologic Disconnection means the removal of direct routes of drainage or overland flow of road runoff to a watercourse or lake by directing drainage or overland flow onto stable portions of the forest floor to

dissipate energy, facilitate percolation, and resist or prevent channelization.

Inner Gorge means a geomorphic feature formed by coalescing scars originating from landsliding and erosional processes caused by active ~~stream~~ watercourse erosion. The feature is identified as that area beginning immediately adjacent to the ~~stream~~ watercourse channel below the first break in slope.

Inside Ditch Hydraulic Capacity means the ability of an inboard ditch to contain flow from a runoff event without overflowing to the road surface or substantially downcutting the inboard ditch.

Intermediate Treatments means . . . .

Resource Conservation Standards see PRC 4525.3.

Restorable Habitat means habitat where the Department of Fish and Game has determined that 1) any life stage of an anadromous salmonid is fully or partially blocked by a temporary barrier from accessing historically occupied habitat or suitable habitat, or 2) current or historic presence data are not available and suitable habitat exists that is not blocked by a naturally existing total barrier. Temporary barriers include, but are not limited to large woody debris pieces or log jams, in-stream landslide or torrent deposits, filled-in channels from historic logging, any stream crossing that prevents fish passage, agricultural diversions, and most small dams (where

fishway construction or removal is feasible). The basis for determining restorable habitat in a planning watershed shall be determined through data that document historical use by anadromous salmonids, the presence of suitable habitat, or habitat that could become suitable through restoration, which is not blocked by a naturally existing total barrier to fish passage. Permanent non-restorable barriers include large dams (where fishway construction is not feasible), and natural barriers such as long term bed-rock falls and large, static, ancient landslides with high-gradient or high-velocity barriers. Planning watersheds upstream from permanent non-restorable barriers shall be defined as non-restorable.

Rigging means . . .

Rip-Rap means . . . .

Road Decommissioning means the temporary or permanent abandonment of a road prism and associated landings resulting in maintenance-free drainage and erosion control. This includes removal or stabilization of drainage structures and fills, as well as unstable road and landing fills, hydrologic disconnection of the road prism, stabilization of exposed excavated areas or material, and application of measures to prevent and control erosion.

Road Failure means . . . .

Road Maintenance means activities used to maintain and repair roads involving minor manipulation of the road prism to produce a stable operating

surface and to ensure road drainage facilities, structures, cutbanks and fillslopes are kept in a condition to protect the road, minimize erosion, and to prevent sediment discharge into a watercourse or lake. Examples of road maintenance include shaping and/or rocking a road surface; installation and maintenance of rolling and critical dips; restoring functional capacity of inboard ditches, cross drains, or culverts; and repairing water bars.

Road Prism means all parts of a road including cut banks, ditches, road surfaces, road shoulders, and road fills.

Rolling Dip means . . . .

Scattered Parcel means . . . .

Scour means the process of erosion by flowing water.

Screening Trees means . . . .

Seasonal Road means . . . .

Sediment Filter Strip means a structure or vegetation that substantially prevents concentration, transport, and delivery of sediment to a watercourse or lake by reducing velocity and filtering water through features such as gradual slopes treated with vegetation, gentle slopes, woody debris and mulch or settling basins.

Seed Tree a . . . .

Spotted Owl Resource Plan means . . . .

~~**Stable operating surface** means that throughout the period of use, the operating surface of a logging road or landing does not either (1) generate waterborne sediment in amounts sufficient to cause a turbidity increase in downstream Class I, II, III, or IV waters, or in amounts sufficient to cause a turbidity increase in drainage facilities that discharge into Class I, II, III, or IV waters or, that is visible or would violate applicable water quality requirements; or (2) channel water for more than 50 feet that is discharged into Class I, II, III, or IV waters.~~

Stable Operating Surface means a road or landing surface that can support vehicular traffic and that routes water runoff off of the road surface or into drainage facilities without concentrating flow in ruts (tire tracks) or ponding flow in depressions. The number, placement, and design of drainage facilities or drainage structures on a stable operating surface prevents the transport of fine-grained materials from the road or landing surface into watercourses in quantities deleterious to the beneficial uses of water.

Stand Vigor is . . . .

Watercourse Bank means . . . .

Watercourse Sideslope means the hillslope immediately adjacent to a watercourse or lake measured from the watercourse or lake transition line to a point 100 feet upslope.

Watercourse Sideslope Class means the steepness of the watercourse sideslope categorized into one of three classes: <30 percent, 30 percent – 50 percent, >50 percent). Where watercourse sideslope configurations are variable, a weighted average of the percent slope shall be used to determine the watercourse sideslope class. The weighted average shall be calculated based on distances of 200 feet or less along the watercourse.

Watersheds with Listed Anadromous Salmonids ~~threatened or impaired values~~ means any planning watershed where ~~populations of~~ listed anadromous salmonids have been documented or where restorable habitat exists. ~~that are listed as threatened, endangered, or candidate under the State or Federal Endangered Species Acts with their implementing regulations, are currently present or can be restored~~.

Wet meadows and other wet areas means . . . .

~~The amendments to 14 CCR § 895.1 adopted on March 15, 2000 and April 4, 2000, which became effective July 1, 2000, shall expire on December 31, 2006.~~

Amend 14 CCR §§ 916.4, 936.4, and 956.4 - Watercourse and Lake Protection

(c) The protection and WLPZ widths for Class III and Class IV watercourses and lakes shall prevent the degradation of the downstream beneficial use of water and shall be determined on a site-specific basis.

(1) Where operations occur adjacent to Class III watercourses, the RPF shall designate in the plan an equipment limitation zone (ELZ) of at least 25 feet where watercourse sideslope steepness is less than 30% percent and at least 50 feet where watercourse sideslope steepness is 30% percent or greater unless an exception is explained and justified ~~otherwise~~ in the plan and approved by the ~~d~~Director. Where exceptions are proposed within watersheds with listed anadromous salmonids, the Director's approval shall be made with DFG concurrence.

(A) Except within watersheds with listed anadromous salmonids, Class III watercourses within logging areas where the EHR is Low and the watercourse sideslopes are less than 30% percent shall not require an ELZ unless proposed by the RPF or required by the Director.

(B) The RPF shall describe the limitations on the use of heavy equipment in the plan.

(C) Where appropriate to protect the beneficial uses of water, the RPF shall describe additional protection measures ~~which~~ that may include surface cover retention, vegetation protection and timber falling limitations.

(D) The location of the areas of heavy equipment use in any ELZ shall be clearly described in the plan, or flagged or marked on the ground before the preharvest inspection.

(2) When necessary to protect the beneficial use of water, the RPF shall designate and the Director may require a WLPZ for Class III and Class IV watercourses and lakes or an ELZ for Class IV watercourses and lakes.

~~**(2)**~~ **(A)** The width of the WLPZ for Class III and Class IV watercourses and lakes shall be determined from on-site inspection.

(i) Minimum protective measures required when Class III and Class IV protection zones are necessary are contained in Table I, 14 CCR § 916.5 [936.5, 956.5].

(3) Soil deposited during timber operations in a Class III watercourse other than at a temporary crossing shall be removed and debris deposited during timber operations shall be removed or stabilized before the conclusion of timber operations, or before October 15.

(A) Temporary crossings shall be removed before the winter period, or as approved by the Director.

(4) When approved by the Director on an individual plan basis as provided in Section 14 CCR § 916.4(c)(1) [936.4(c)(1), 956.4(c)(1)], Class IV watercourses and lakes shall be exempted from required protection when such protection is inconsistent with the management objectives of the owner of the manmade watercourse or lake.

Amend 14 CCR §§ 916.9, 936.9, and 956.9 Minimization and Mitigation Measures for Protection and Restoration in Watersheds with Listed Anadromous Salmonids ~~Threatened or Impaired Values~~

In addition to all other district Forest Practice Rules, the following requirements shall apply in any ~~planning~~ watershed with listed anadromous salmonids ~~threatened or impaired values~~:

(a) GOAL - Every timber operation shall be planned and conducted to prevent deleterious interference with the watershed conditions that primarily limit the values set forth in 14 CCR § 916.2 [936.2, 956.2](a) (e.g., sediment load increase where sediment is a primary limiting factor; thermal load increase where water temperature is a primary limiting factor; loss of instream large woody debris or recruitment potential where lack of this value is a primary limiting factor; substantial increase in peak flows or large flood frequency where peak flows or large flood frequency are primary limiting factors). To achieve this goal, every timber operation shall be planned and conducted to meet the following objectives where they affect a primary limiting factor:

(1) Comply with the terms of a Total Maximum Daily Load (TMDL) that has been adopted to address factors that may be affected by timber operations if a TMDL has been adopted, or not result in any measurable sediment load increase to a watercourse system or lake.

(2) Not result in any measurable decrease in the stability of a watercourse channel or of a watercourse or lake bank.

(3) Not result in any measurable blockage of any aquatic migratory routes for anadromous salmonids or listed species.

(4) Not result in any measurable stream flow reductions during critical low water periods except as part of an approved water drafting plan pursuant to 14 CCR § 916.9(r) [936.9(r), 956.9(r)].

(5) Consistent with the requirements of 14 CCR § 916.9(i), 14 CCR § 936.9(i), or 14 CCR § 956.9(i); protect, maintain, and restore trees (especially conifers), snags, or downed large woody debris that currently, or may in the foreseeable future, provide large woody debris recruitment needed for instream habitat structure and fluvial geomorphic functions.

(6) Consistent with the requirements of 14 CCR § 916.9(g), 14 CCR § 936.9(g), or 14 CCR § 956.9(g); protect, maintain, and restore the quality and quantity of vegetative canopy needed to: (A) provide shade to the watercourse or lake, (B) minimize daily and seasonal temperature fluctuations, (C) maintain daily and seasonal water temperatures within the preferred range for anadromous salmonids or listed species where they are present or restorable habitat exists ~~could be restored~~, and (D) provide hiding cover and a food base where needed.

(7) Result in no substantial increases in peak flows or large flood frequency.

(b) Pre-plan adverse cumulative watershed effects on the populations and habitat of anadromous salmonids shall be considered. The plan shall specifically acknowledge or refute that such effects exist. Where appropriate, the plan shall set forth measures to effectively reduce such effects.

~~**(c)** Any timber operation or silvicultural prescription within 150 feet of any Class I watercourse or lake transition line or 100 feet of any Class II watercourse or lake transition line shall have protection, maintenance, or restoration of the beneficial uses of water or the populations and habitat of anadromous salmonids or listed aquatic or riparian-associated species as significant objectives.~~

~~Additionally, for evenaged regeneration methods and rehabilitation with the same effects as a clearcut that are adjacent to a WLPZ, a special operating zone shall retain understory and mid-canopy conifers and hardwoods.~~

~~These trees shall be protected during falling, yarding and site preparation to the extent feasible. If trees that are retained within this zone are knocked down during operations, that portion of the trees that is greater than 6" in diameter shall remain within the zone as Large Woody Debris. The zone shall be 25 feet above Class I WLPZs with slopes 0-30% and 50 feet above Class I WLPZs with slopes > 30%.~~

~~(d)~~(c) **(1)** The plan shall fully describe:

(A) the type and location of each measure needed to fully offset sediment loading, thermal loading, and potential significant adverse watershed effects from the proposed timber operations, and

(B) the person(s) responsible for the implementation of each measure, if other than the timber operator.

(2) In proposing, reviewing, and approving such measures, preference shall be given to the following:

(A) measures that are both onsite (i.e., on or near the plan area) and in-kind (i.e., erosion control measures where sediment is the problem), and

(B) sites that are located to maximize the benefits to the impacted portion of a watercourse or lake. Out-of-kind measures (i.e., improving shade where sediment is the problem) shall not be approved as meeting the requirements of this subsection.

~~(e)~~(d) **Channel zone requirements**

(1) There shall be no timber operations within the channel zone with the following exceptions:

(A) timber harvesting that is directed to improve salmonid habitat through the limited use of the selection or commercial thinning silvicultural methods with review and comment by DFG.

(B) timber harvesting necessary for the construction or reconstruction of approved watercourse crossings.

(C) timber harvesting necessary for the protection of public health and safety.

(D) to allow for full suspension cable yarding when necessary to transport logs through the channel zone.

~~**(E)** Class III watercourses where exclusion of timber operations is not needed for protection of listed salmonids.~~

(2) In all instances where trees are proposed to be felled within the channel zone, a base mark shall be placed below the cut line of the harvest

trees within the zone. Such marking shall be completed by the RPF that prepared the plan prior to the preharvest inspection.

(e) Class I Watercourse and Lake Protection Measures – The following shall apply to all Class I watercourses and lakes within watersheds with listed anadromous salmonids.

(1) Any timber operation or silvicultural prescription within 150 feet of any Class I watercourse or lake transition line shall have protection, maintenance, or restoration of the beneficial uses of water or the populations and habitat of anadromous salmonids or listed aquatic or riparian-associated species as significant objectives.

~~**(f)**~~**(2)** The minimum WLPZ width for Class I watercourses and lakes shall be 150 feet from the watercourse or lake transition line.

(A) Where a proposed plan ~~THP~~ is located within the Sacramento or San Joaquin river drainages, and the Director and DFG concur; the RPF may explain and justify other WLPZ widths on areas where evenaged regeneration methods, seed tree removal, shelterwood removal, alternative prescriptions, or rehabilitation ~~will~~ shall not be utilized adjacent to watercourse and lake protection zones and where watercourse sideslopes are less than 30% percent.

(3) For Class I watercourses and lakes, any plan involving timber operations within the WLPZ shall contain clear and enforceable specifications of how any disturbance or log or tree cutting and removal within the Class I WLPZ shall be carried out to conform with 14 CCR §§ 916.2 [936.2, 956.2](a) and 916.9 [936.9, 956.9](a).

~~**(g)**~~**(4)** Within a WLPZ for Class I watercourses and lakes, at least 85 percent overstory canopy shall be retained within 75 feet of the watercourse or lake transition line, and at least 65 percent overstory canopy within the

remainder of the WLPZ. The overstory canopy must be composed of at least 25% percent overstory conifer canopy post-harvest.

(A) Where a proposed plan ~~THP~~ is located within the Sacramento or San Joaquin river drainages, and the Director and DFG concur; the RPF may explain and justify other canopy retention standards on areas where even aged regeneration methods, seed tree removal, shelterwood removal, alternative prescriptions, or rehabilitation ~~will~~ shall not be utilized adjacent to watercourse and lake protection zones and where watercourse sideslopes are less than 30% percent.

(5) Within a WLPZ for Class I watercourses and lakes, h~~H~~arvesting of hardwoods shall only occur for the purpose of enabling conifer regeneration.

(6) Within a WLPZ for Class I watercourses and lakes, sufficient trees shall be retained to maintain the preharvest level of direct shading to pools. The percentage of shade provided by Group A species shall not be reduced relative to other species.

~~**(h)** For Class I watercourses and lakes, any plan involving timber operations within the WLPZ shall contain the following information:~~

~~**(1)** A clear and enforceable specification of how any disturbance or log or tree cutting and removal within the Class I WLPZ shall be carried out to conform with 14 CCR 916.2 [936.2, 956.2](a) and 916.9 [936.9, 956.9](a).~~

~~**(2)** A description of all existing permanent crossings of Class I watercourses and lakes by logging roads and clear specification regarding how these crossings are to be modified, used, and treated to minimize risks, giving special attention to allowing fish to pass both upstream and downstream during all life stages.~~

~~**(3)** Clear and enforceable specifications for construction and operation of any new crossing of Class I watercourses and lakes to prevent direct harm, habitat degradation, water velocity increase, hindrance of fish passage, or other potential impairment of beneficial uses of water.~~

~~**(i)**~~**(7)** Recruitment of large woody debris for aquatic habitat in Class I anadromous fish-bearing watercourses or other restorable habitat ~~water~~ shall be ensured by retaining the ten (10) largest dbh conifers (live or dead) per 330 feet of stream channel length on each side of the watercourse ~~that are the most conducive to recruitment~~ to provide for the beneficial functions of riparian zones. The retained conifers shall be selected from within the plan area that lies within 100 ~~50~~ feet of the watercourse transition line. Where the plan boundary is an ownership boundary, a class I watercourse, and the WLPZ on both sides of the watercourse currently meets the stocking standards listed under 14 CCR § 912.7[932.7,952.7](b)(2)}; the ~~five (5)~~ ten (10) largest dbh conifers (live or dead) per 330 feet of stream channel length that ~~are the most conducive to recruitment to~~ provide for the beneficial functions of riparian zones within the plan area shall be retained within 100~~50~~ feet of the watercourse transition line.

~~The RPF may propose alternatives to substitute smaller diameter trees, trees that are more than 50 feet from the watercourse transition line, or other alternatives on a site specific basis. The RPF must explain and justify in the THP why the proposed alternative is more conducive to current and long-term Large Woody Debris recruitment, shading, bank stability, and the beneficial functions of riparian zones.~~

~~**(j)**~~**(8)** Where an inner gorge extends beyond a Class I WLPZ and slopes are greater than 55% percent, a special management zone shall be established

where the use of evenaged regeneration methods is prohibited. This zone shall extend upslope to the first major break-in-slope to less than 55% percent for a distance of 100 feet or more, or 300 feet as measured from the watercourse or lake transition line, which ever is less. All operations on slopes exceeding 65% within an inner gorge of a Class I or II watercourse shall be reviewed by a Professional ~~Registered~~ Geologist prior to plan approval, regardless of whether they are proposed within a WLPZ or outside of a WLPZ and disclosed and incorporated in the plan as appropriate.

(9) For evenaged regeneration methods and rehabilitation with the same effects as a clearcut that are adjacent to a Class I WLPZ, a special operating zone shall retain understory and mid-canopy conifers and hardwoods. These trees shall be protected during falling, yarding and site preparation to the extent feasible. If trees that are retained within this zone are knocked down during operations, that portion of the trees that is greater than 6" in diameter shall remain within the zone as Large Woody Debris. The zone shall be 25 feet above Class I WLPZs with watercourse sideslopes 0-30 percent and 50 feet above Class I WLPZs with watercourse sideslopes > 30 percent.

(f) Class II Watercourse and Lake Protection Measures – The following shall apply to all Class II watercourses and lakes mapped on current 1:24,000 scale U.S. Geological Survey topographic map within watersheds with listed anadromous salmonids.

(1) Any timber operation or silvicultural prescription within 100 feet of any Class II watercourse or lake transition line shall have protection, maintenance, or restoration of the beneficial uses of water or the

populations and habitat of anadromous salmonids or listed aquatic or riparian-associated species as significant objectives.

(2) Where an inner gorge extends beyond a Class II WLPZ and watercourse sideslopes are greater than 55 percent, a special management zone shall be established where the use of evenaged regeneration methods is prohibited. This zone shall extend upslope to the first major break-in-slope to less than 55 percent for a distance of 100 feet or more, or 200 feet as measured from the watercourse or lake transition line, which ever is less. All operations within the special management zone shall be reviewed by a Professional Geologist prior to plan approval and disclosed and incorporated in the plan as appropriate.

(3) The following shall apply to all Class II watercourses that are tributary to Class I watercourses with listed anadromous salmonids in the planning watershed where timber operations are proposed or the planning watershed immediately downstream:

(A) Inner Band: From 0-50 feet, retain a minimum of 85 percent post-harvest overstory canopy. The overstory canopy must be composed of at least 25 percent overstory conifer canopy post-harvest.

(B) Outer Band with 0-30 percent watercourse sideslope: From 50-75 feet, retain a minimum of 65 percent post-harvest overstory canopy. The overstory canopy must be composed of at least 25 percent overstory conifer canopy post-harvest.

(C) Outer Band with 31-50 percent watercourse sideslope: From 50-100 feet, retain a minimum of 65 percent post harvest overstory canopy. The overstory canopy must be composed of at least 25 percent overstory conifer canopy post-harvest.

(D) Outer Band with >50 percent watercourse sideslope: From 50-125 feet, retain a minimum of 65 percent post-harvest overstory canopy. WLPZ width may be reduced to 100 feet for cable yarding operations. The overstory canopy must be composed of at least 25 percent overstory conifer canopy post-harvest.

(g) Class III Watercourse Protection Measures – The following shall apply to all Class III watercourses within watersheds with listed anadromous salmonids in or adjacent to harvest units where evenaged management, rehabilitation of under-stocked stands, or variable retention prescriptions are proposed.

(1) retain all trees situated within the channel zone and trees that have boles that overlap the edge of the channel zone;

(2) within the ELZ, at least 50 percent of the understory vegetation shall be left post-harvest in an evenly distributed condition;

(3) within the ELZ; retain all snags, large woody debris, and countable trees 10 inches dbh or less, except where necessary to allow for cable yarding corridors, safety, or crossing construction;

(4) within the ELZ, prohibit initiation of any burning;

(5) allow cable yarding when necessary to transport logs through a Class III ELZ;

(6) tractor yarding is prohibited, except for the use of feller-bunchers and shovel yarding that minimize soil compaction and disturbance and;

(7) retain at least 15 square feet basal area per acre of hardwoods where it exists before harvest, including the largest hardwoods available for

this purpose. Retain all hardwoods when less than 15 square feet basal area per acre is present before harvest.

(h) Where harvesting is proposed on a connected headwall swale:

(1) only the selection regeneration method allowed under 14 CCR § 913.2 [933.2, 953.2] (a) (2) (A) or the commercial thinning intermediate treatment allowed under 14 CCR § 913.3 [933.3, 953.3] (a) may be utilized in that area,

(2) Areas of ground based yarding shall be delineated on the ground as an equipment limitation zone and marked prior to the preharvest inspection.

(3) All proposed road construction or reconstruction shall be reviewed by a Professional Geologist and disclosed and incorporated in the plan as appropriate prior to plan approval.

~~**(k)**~~**(i)** From October 15 to May 1, ~~the following shall apply: **(1)**~~ no timber operations shall take place unless the approved plan incorporates a complete winter period operating plan pursuant to 14 CCR § 914.7(a) [934.7(a), 954.7(a)], ~~**(2)** unless the winter period operating plan proposes operations during an extended period with low antecedent soil wetness, no tractor roads shall be constructed, reconstructed, or used on slopes that are over 40 percent and within 200 feet of a Class I, II, or III watercourse, as measured from the watercourse or lake transition line, and **(3)** operation of trucks and heavy equipment on roads and landings shall be limited to those with a stable operating surface.~~

~~**(l)** Construction or reconstruction of logging roads, tractor roads, or landings shall not take place during the winter period unless the approved plan incorporates a complete winter period operating plan pursuant to 14 CCR 914.7(a) [934.7(a), 954.7(a)] that specifically address such road construction. Use of logging roads, tractor roads, or landings shall not take~~

~~place at any location where saturated soil conditions exist, where a stable logging road or landing operating surface does not exist, or when visibly turbid water from the road, landing, or skid trail surface or inside ditch may reach a watercourse or lake. Grading to obtain a drier running surface more than one time before reincorporation of any resulting berms back into the road surface is prohibited.~~

~~**(m)** All tractor roads shall have drainage and/or drainage collection and storage facilities installed as soon as practical following yarding and prior to either (1) the start of any rain which causes overland flow across or along the disturbed surface within a WLPZ or within any ELZ or EEZ designated for watercourse or lake protection, or (2) any day with a National Weather Service forecast of a chance of rain of 30 percent or more, a flash flood warning, or a flash flood watch.~~

~~**(n)**~~**(j)** Within the WLPZ, and within any ELZ or EEZ designated for watercourse or lake protection, treatments to stabilize soils, minimize soil erosion, and prevent the discharge of sediment into waters in amounts deleterious to aquatic species or the quality and beneficial uses of water, or that threaten to violate applicable water quality requirements, shall be applied in accordance with the following standards:

(1) The following requirements shall apply to all such treatments.

(A) They shall be described in the plan.

(B) For areas disturbed from May 1 through October 15, treatment shall be completed prior to the start of any rain that causes overland flow across or along the disturbed surface.

(C) For areas disturbed from October 16 through April 30, treatment shall be completed prior to any day for which a chance of rain of 30 percent or greater is forecast by the National Weather Service or within 10 days, whichever is earlier.

(2) The traveled surface of logging roads shall be treated to prevent waterborne transport of sediment and concentration of runoff that results from timber operations.

(3) The treatment for other disturbed areas, including:

(A) areas exceeding 100 contiguous square feet where timber operations have exposed bare soil,

(B) approaches to tractor road watercourse crossings between the drainage facilities closest to the crossing,

(C) road cut banks and fills, and

(D) any other area of disturbed soil that threatens to discharge sediment into waters in amounts deleterious to the quality and beneficial uses of water;

may include, but need not be limited to, mulching, rip-rapping, grass seeding, or chemical soil stabilizers. Where straw, mulch, or slash is used, the minimum coverage shall be 90% percent, and any treated area that has been subject to reuse or has less than 90% percent surface cover shall be treated again prior to the end of timber operations. The RPF may propose alternative treatments that will achieve the same level of erosion control and sediment discharge prevention.

(4) Where the undisturbed natural ground cover cannot effectively protect beneficial uses of water from timber operations, the ground shall be treated by measures including, but not limited to, seeding, mulching, or replanting, in order to retain and improve its natural ability to filter sediment, minimize soil erosion, and stabilize banks of watercourses and lakes.

~~**(o)**~~**(k)** As part of the plan, the RPF shall identify active erosion sites in the logging area, assess them to determine which sites pose significant risks to the beneficial uses of water, assess them to determine whether feasible remedies exist, and address in the plan feasible remediation for all sites that pose significant risk to the beneficial uses of water.

~~**(p)** The erosion control maintenance period on permanent and seasonal roads and associated landings that are not abandoned in accordance with 14 CCR 923.8 [943.8 , 963.8] shall be three years.~~

~~**(q)**~~**(l)** Site preparation activities shall be designed to prevent soil disturbance within, and minimize soil movement into, the channels of

watercourses. Prior to any broadcast burning, burning prescriptions shall be designed to prevent loss of large woody debris in watercourses, and vegetation and duff within a WLPZ, or within any ELZ or EEZ designated for watercourse or lake protection. No ignition is to occur within any WLPZ, or within any ELZ or EEZ designated for watercourse or lake protection. When burning prescriptions are proposed, the measures or burning restrictions which are intended to accomplish this goal shall be stated in the plan and included in any required burning permit. This information shall be provided in addition to the information required under 14 CCR § 915.4 [935.4, 955.4].

~~**(r)** Water drafting for timber operations from within a channel zone of a natural watercourse or from a lake shall conform with the following standards:~~

~~**(1)** The RPF shall incorporate into the THP:~~

~~**(A)** a description and map of proposed water drafting locations,~~

~~**(B)** the watercourse or lake classification, and~~

~~**(C)** the general drafting location use parameters (i.e., yearly timing, estimated total volume needed, estimated total uptake rate and filling time, and associated water drafting activities from other THPs).~~

~~**(2)** On Class I and Class II streams where the RPF has estimated that:~~

~~**(A)** bypass flows are less than 2 cubic feet per second, or~~

~~**(B)** pool volume at the water drafting site would be reduced by 10%, or~~

~~**(C)** diversion rate exceeds 350 gallons per minute, or~~

~~**(D)** diversion rate exceeds 10% of the above surface flow;~~

~~no water drafting shall occur unless the RPF prepares a water drafting plan to be reviewed and, if necessary a stream bed alteration agreement issued, by~~

~~DFG and approved by the Director. The Director may accept the project description and conditions portion of an approved "Streambed Alteration Agreement" issued under the Fish and Game Code (F&GC 1600 et seq.) which is submitted instead of the water drafting plan described in 14 CCR § 916.9 [936.9, 956.9] (r)(2)(D)(1-5).~~

~~The water drafting plan shall include, but not be limited to:~~

~~**1**. disclosure of estimated percent streamflow reduction and duration of reduction,~~

~~**2**. discussion of the effects of single pumping operations, or multiple pumping operations at the same location,~~

~~**3**. proposed alternatives and discussion to prevent adverse effects (e.g. reduction in hose diameter, reduction in total intake at one location, described allowances for recharge time, and alternative water drafting locations),~~

~~**4**. conditions for operators to include an operations log kept on the water truck containing the following information: Date, Time, Pump Rate, Filling Time, Screen Cleaned, Screen Conditions, and Bypass flow observations,~~

~~**5**. a statement by the RPF for a pre-operations field review with the operator to discuss the conditions in the water drafting plan.~~

~~**(3)** Intakes shall be screened in Class I and Class II waters. Screens shall be designed to prevent the entrainment or impingement of all life stages of fish or amphibians. Screen specifications shall be included in the plan.~~

~~**(4)** Approaches to drafting locations within a WLPZ shall be surfaced with rock or other suitable material to avoid generation of sediment.~~

~~(s)~~**(m)** No timber operations are allowed in a WLPZ, or within any ELZ or EEZ designated for watercourse or lake protection under emergency notices or exemption notices except for hauling on existing roads, road maintenance, ~~and~~ operations conducted for public safety, construction or reconstruction of approved watercourse crossings, temporary crossings of dry Class III watercourses which do not require a "Streambed Alteration Agreement" under the Fish and Game Code, or forest conditions requiring harvesting that is approved by a letter of concurrence from DFG.

~~(t)~~**(n)** No salvage logging is allowed in a WLPZ. ~~without an approved HCP, an SYP, or an approved plan that contains a section that sets forth objectives, goals, and measurable results for streamside salvage operations.~~

~~(u)~~**(o)** Nonstandard practices (i.e., waivers, exceptions, in-lieu practices, and alternative practices) shall comply with the goal set forth in subsection (a) above as well as with the other requirements set forth in the rules.

~~(v)~~**(p)** The Director may approve alternatives provided the alternative practice will achieve the goal of this section. The Director shall not accept for inclusion in a plan any alternative practice as described in this section where two or more agencies listed in § 4582.6 of the PRC and 14 CCR § 1037.3 have submitted written comments which lead to the Director's conclusion that the proposed alternative will not meet the goal of this section and the agency(ies) participated in the review of the plan, including an on-the-ground inspection.

~~(w)~~**(q)** Other measures that would effectively achieve the goal set forth in 14 CCR § 916.9(a) [936.9(a), 956.9(a)] may be approved in accordance with 14 CCR § 916.6 [936.6, 956.6].

~~(x)~~**(r)** The provisions of 14 CCR § 916.9 [936.9, 956.9] shall not apply to a plan that is subject to an incidental take permit based upon an approved Habitat Conservation Plan or Natural Community Conservation Plan that addresses ~~anadromous salmonid~~ protection of all listed anadromous salmonids within the planning watershed.

~~(y) This section shall expire on December 31, 2006.~~

Amend 14 CCR §§ 916.11, 936.11, and 956.11 Effectiveness and Implementation Monitoring

~~**(a)** Where timber operations will be conducted within a WLPZ, the Director may require a post-harvest evaluation of the effectiveness of the mitigations and practices designed to protect the watercourse(s) or lake(s) as a condition of plan approval. The Director shall require such an evaluation if the necessity for the evaluation is supported by substantial evidence in the record. This evidence may include, but is not limited to, potential land failures, accelerated rate of road construction or harvesting within a watershed, concentration or intensity of harvesting activity near watercourses, and potential for accelerated windthrow. The design and implementation of the evaluation shall be done in consultation with the Director, the RWQCB or DFG, and THP submitter, and the sufficiency of the information requested by the Director shall be judged in light of reasonableness and practicality. The evaluation may utilize procedures including, but not limited, to:~~

~~(1) Procedures for effectiveness and implementation monitoring,~~

~~(2) Existing landowner monitoring programs, or~~

~~(3) Photographic monitoring~~

~~(b) This section shall expire on December 31, 2006.~~

[Placeholder for revised language to be developed at a later date. Such language shall be consistent with the following monitoring guidelines:

1) The Board of Forestry and Fire Protection shall develop and implement a monitoring program.

2) The data, protocols, methods, and techniques of analysis used in the monitoring program shall be scientifically based and vetted by a multi-disciplinary peer review team.

3) The Department shall lead an interagency review team to consider and evaluate all available data, whether currently existing or made available from any source in the future, and shall, through a collaborative process, report the findings to the Board of Forestry and Fire Protection on a periodic basis.

4) *The Director shall, consistent with the reported findings of the monitoring program, make recommendations to the Board of Forestry and Fire Protection for rule changes.]*

Amend 14 CCR §§ 923.9, 943.9, and 963.9 Minimization and Mitigation Measures for Roads and Landings in Watersheds with Listed Anadromous Salmonids ~~Threatened or Impaired Values~~

In addition to all other district Forest Practice Rules, the following requirements shall apply to construction, reconstruction, improvements ~~upgrades~~, maintenance, and operation of roads within and appurtenant to plans in any ~~planning~~ watershed with listed anadromous salmonids ~~threatened or impaired values~~:

(a) An assessment of road surface and drainage conditions for all road segments within the plan area and appurtenant to proposed operations shall be included in the plan.

(1) The assessment shall contain a list of site-specific, field inventory information including proposed treatment of existing or potential sediment sources for all crossings, ditch relief culverts, road surfaces, road cuts, road fills, landings, turnouts and inboard ditches.

(A) Field inventory information shall be obtained by an RPF or supervised designee while traversing the road segments.

(2) The assessment shall be subject to review and concurrence by DFG. Additional field inventory, work sites, and/or alternative treatments may be required.

(3) The results of the road assessment shall be used to, construct, reconstruct, or decommission road segments prior to filing a work completion report. Maintenance needs identified during and after the road assessment shall be addressed as soon as is feasible.

(b) For Class I watercourses, any plan involving timber operations within the WLPZ shall contain the following information:

(2) A description of all crossings of Class I watercourses by logging roads and clear specification regarding how these crossings are to be modified, used, and treated to minimize risks, giving special attention to allowing fish to pass both upstream and downstream during all life stages.

(3) Clear and enforceable specifications for construction and operation of any new crossing of Class I watercourses to prevent direct harm, habitat degradation, water velocity increase, hindrance of fish passage, or other potential impairment of beneficial uses of water.

(c) Within WLPZs, any new road or landing construction, reconstruction, new watercourse crossings, use of Class I fords or opening of old roads (except for the purpose of decommissioning) will be subject to approval by the Director, with concurrence by DFG. The Director will only approve such practices where protection for aquatic habitat provided by proposed practices is at least equal to the protection provided by the use of alternate routes or locations outside of the WLPZ.

~~**(a)**~~**(d)** Where logging road or landing construction or reconstruction is proposed, the plan shall state the locations of and specifications for road or landing abandonment or other mitigation measures to minimize the adverse effects of long-term site occupancy of the transportation system within the watershed.

(e) The guidelines and performance standards for road decommissioning methods described in the California Salmonid Stream Habitat Restoration Manual, 1998, 3rd edition; pages X-53 through X-59 (published by State of

California, Resources Agency, California Department of Fish and Game) shall be followed.

(f) The following design features shall be included in the maintenance, construction, reconstruction, or decommissioning of roads, except where site-specific alternatives are explained, justified, and approved by the Director, with concurrence by DFG. The Director may only approve alternatives where the consequences for aquatic habitat are no greater than would result from the standard measures. Except for maintenance needs that arise from October 15 to June 1, all work described below shall be completed before October 15 in the year that work begins.

(1) Road surfaces shall be outsloped with rolling dips, wherever feasible.

(2) All road segments shall be hydrologically disconnected, to the extent feasible, from watercourses and lakes by site specific application of the following: outsloping, rocking, installation of rolling dips, cross drains, and/or waterbars, except where site-specific alternatives are explained and justified in the plan, and approved by the Director, with concurrence by DFG. All of these features shall drain to stable and sediment filter strips.

(3) Crossings and associated fills shall be removed where there is evidence of failure potential or sediment delivery to Class I, II, or III watercourses and lakes.

(4) Culverts shall be replaced or removed if they are crushed, perforated, piping, separated, not adequate to carry water from the fifty-year flood level, located in unstable fill, or causing erosion that may be expected to deliver sediment to Class I, II, or III watercourses and lakes.

Replaced culverts shall be installed at or as close to the original stream grade and slope as feasible.

(5) Each road approach to a watercourse crossing shall be treated to create and maintain a stable operating surface in accordance with subsection (A) through (F) below. The road approach encompasses either of the following areas, whichever is less:

(i) the area from the watercourse channel to the nearest drainage facility, but not less than 50 feet; or

(ii) the area from the watercourse channel to the first high point on the road where road drainage flows away from the watercourse.

(A) Road surfaces on the following shall be treated with high-quality, durable, angular rock (minimum compacted 6-inch depth) or paving:

(i) permanent roads

(ii) seasonal roads crossing Class I watercourses

(iii) roads used for hauling (logs, rock, heavy equipment) from October 15 to June 1.

(B) Road surfaces on the following shall be treated with either: rock, slash, seed and straw mulch, seed, or stabilized straw mulch and slash:

(i) all seasonal roads used for hauling in the current year

(ii) all seasonal roads used from October 15 to June 1 for purposes other than hauling

(C) Approaches to temporary crossings shall be rocked as needed after crossing removal to avoid rutting or pumping fines during use.

(D) Ditches exhibiting downcutting along the following shall be lined with high-quality, durable rock:

(i) permanent roads

(ii) seasonal roads crossing Class I watercourses

(iii) roads used for hauling from October 15 to June 1.

(E) Ditches along the following shall be treated to prevent scour:

(i) seasonal roads used for hauling in the current year

(ii) seasonal roads used from October 15 to June 1 for purposes other than hauling.

(F) Bare soil on associated fill slopes, shoulders and cuts shall be treated to minimize erosion.

(6) Sediment discharge from unstable or eroding cutbanks, fillslopes and landing fills will be prevented by pulling, buttressing, or other means and by installing and maintaining effective erosion control materials.

(7) Bridges (including associated fill, rip rap, and abutments) and bridge approaches showing evidence of failure potential or sediment delivery to Class I, II, or III watercourses and lakes shall be repaired, replaced, or removed.

~~**(b)**~~**(8)** Unless prohibited by existing contracts with the U.S.D.A. Forest Service or other federal agency, new and reconstructed logging roads shall be no wider than a single-lane compatible with the largest type of equipment specified for use on the road, with adequate turnouts provided as required for safety. The maximum width of these roads shall be specified in the plan. These roads shall be outsloped where feasible and drained with water breaks or rolling dips (where the road grade is inclined at 7 percent or less), in conformance with other applicable Forest Practice Rules.

~~**(c)**~~**(g)** The following shall apply on slopes greater than 50% percent:

(1) Specific provisions of construction shall be identified and described for all new roads.

(2) Where cutbank stability is not an issue, roads may be constructed as a full-benched cut (no fill). Spoils not utilized in road construction shall be disposed of in stable areas with less than 30 percent slope and outside of any WLPZ, EEZ, or ELZ.

(3) Alternatively, roads may be constructed with balanced cuts and fills if properly engineered, or fills may be removed with the slopes recontoured prior to the winter period.

~~**(d)**~~**(h)** In addition to the provisions listed under 14 CCR § 923.1(e) [943.1(e), 963.1(e)], all permanent or seasonal logging roads with a grade of 15% percent or greater that extends 500 continuous feet or more shall have specific erosion control measures stated in the plan.

~~**(e)**~~**(i)** Where situations exist that elevate risks to the values set forth in 14 CCR § 916.2(a), [936.2(a), 956.2(a)] (e.g., road networks are remote, the landscape is unstable, water conveyance features historically have a high failure rate, culvert fills are large) drainage structures and erosion control features shall be oversized, low maintenance, or reinforced, or they shall be removed before the completion of the timber operation. The method of analysis and the design for crossing protection shall be included in the plan.

(j) Erosion control materials shall be applied in sufficient quantity prior to the onset of measurable precipitation with re-application as needed to avoid any visible increase in surface erosion or turbidity in Class I, II or III receiving watercourses and lakes.

(k) Prior to use for hauling, all roads in Class I WLPZs shall be surfaced with high quality, durable, rock surfacing (minimum compacted 6 inch depth) or paving, and a stable operating surface shall be maintained.

(l) No road or landing construction, reconstruction, or decommissioning shall be undertaken from October 15th to June 1st, or at any time outside this period when saturated soil conditions exist, unless explained,

justified, and approved by the Director, with concurrence by DFG. The Director will only approve exceptions where the protection provided for aquatic habitat by the proposed practices is at least equal to the protection provided by the above time period or conditions. Access without specific approval by the Director is allowed to correct emergency, road-related problems demanding immediate action.

(m) Use of unpaved roads shall cease when precipitation is sufficient to generate overland flow off the road surface, use of any portion of the road results in rutting of the road surface, or a stable operating surface can not be maintained.

(n) **(1)** Resumption of road use shall only occur when there is a stable operating surface.

(2) Resumption of road or landing construction or reconstruction, shall not occur until the soil conditions allow a stable operating surface to be developed.

(o) **(1)** All roads within the plan area and appurtenant to proposed operations shall be inspected

(A) by the LTO at least twice annually – once between June 1st and October 15th and at least once after October 15th following the first storm event producing bankfull stage- prior to completion of operations;

(B) by the timberland owner during the same time period for the remainder of the prescribed maintenance period.

(2) The inspection shall be started as soon as conditions permit access (in accordance with 14 CCR § 923.9 [943.9, 963.9](n)) to ensure that drainage structures and facilities are functioning to hydrologically disconnect the road prism from waters.

(3) Inspection results and follow up corrective measures shall be documented and shall be provided to CDF and DFG.

(p) Decommissioned roads shall be inspected following the first storm event producing bankfull stage after decommissioning and again prior to filing the completion report. The purpose of the inspection will be to verify the effectiveness of treatments in preventing sediment discharges to waters and to ensure treatments are functioning to restore natural drainage and hillslope stability. If treatments are found to be ineffective prior to the end of the prescribed maintenance period, further treatments shall be applied if the volume of sediment prevented from entering a channel by additional treatments is greater than that incurred by re-entering the site.

(q) During road inspection and maintenance, measures shall be employed to ensure the following: waterbars fully capture run-off from road surfaces and discharge it without gully formation or sediment delivery to waters; culverts (including crossdrains) are not occluded by debris; inboard ditches are not downcutting or scouring; cutbank erosion is minimized, and the fine sediment present on road surfaces is prevented from delivery to Class I, II, or III watercourses and lakes.

(r) Routine corrective work that prevents diversion of water from a watercourse or ditch or helps maintain a stable operating surface (e.g., repairing inboard ditches, cross drains, water bars, road surface and fill, unblocking of culverts) shall be performed as soon as possible, regardless of the time of year. Vehicle access for routine corrective work shall only be permitted in accordance with 14 CCR § 923.9 [943.9, 963.9](n). Other maintenance needs of lower priority shall be undertaken between June 1st and October 15th.

(s) Forest floor discharge sites below the outlets of drainage facilities on all roads within the plan area and appurtenant to proposed operations shall be inspected by the LTO for evidence of sediment delivery to Class I, II, or III watercourses and lakes at least twice annually; once between June 1 and October 15, and at least once after October 15 following the first storm event producing bankfull stage discharges prior to filing the notice of completion report. If evidence of sediment delivery is present, additional cross drains, waterbars, or rolling dips shall be installed to reduce the discharge volume to the site.

(t) Grading of road surfaces shall occur only when necessary to achieve a uniform, stable, and well-drained operating surface. Inboard ditches shall be graded only when they are blocked or lack adequate inside ditch hydraulic capacity, or driver safety is a concern. Where feasible, blading the segment of ditch between the watercourse and first drainage facility shall be avoided.

(u) From October 15 to May 1, the following shall apply:

(1) no tractor roads shall be constructed, reconstructed, or used on slopes that are over 40 percent and within 200 feet of a Class I, II, or III watercourse, as measured from the watercourse or lake transition line unless a winter period operating plan required pursuant to 14 CCR § 916.9 [936.9, 956.9] (h) has been approved for operations during an extended period with low antecedent soil wetness,, and

(2) operation of trucks and heavy equipment on roads and landings shall be limited to those with a stable operating surface.

(v) Construction or reconstruction of logging roads, tractor roads, or landings shall not take place during the winter period unless an approved

winter period operating plan required pursuant to 14 CCR § 916.9 [936.9, 956.9] (h) specifically addresses such road construction. Use of logging roads, tractor roads, or landings shall not take place at any location where saturated soil conditions exist, where a stable logging road or landing operating surface does not exist, or when visibly turbid water from the road, landing, or skid trail surface or inside ditch may reach a watercourse or lake. Grading to obtain a drier running surface more than one time before reincorporation of any resulting berms back into the road surface is prohibited.

(w) All tractor roads shall have drainage and/or drainage collection and storage facilities installed as soon as practical following yarding and prior to either:

(1) the start of any rain which causes overland flow across or along the disturbed surface within a WLPZ or within any ELZ or EEZ designated for watercourse or lake protection, or

(2) any day with a National Weather Service forecast of a chance of rain of 30 percent or more, a flash flood warning, or a flash flood watch.

(x) The erosion control maintenance period on permanent and seasonal roads and associated landings that are not abandoned in accordance with 14 CCR § 923.8 [943.8 , 963.8] shall be three years.

(y) Water drafting for timber operations from within a channel zone of a natural watercourse or from a lake shall conform with the following standards:

(1) The RPF shall incorporate into the plan:

(A) a description and map of proposed water drafting locations,

(B) the watercourse or lake classification, and

(C) the general drafting location use parameters (i.e., yearly timing, estimated total volume needed, estimated total uptake rate and filling time, and associated water drafting activities from other plans).

(2) On Class I and Class II watercourse where the RPF has estimated that:

(A) bypass flows are less than 2 cubic feet per second, or

(B) pool volume at the water drafting site would be reduced by 10 percent, or

(C) diversion rate exceeds 350 gallons per minute, or

(D) diversion rate exceeds 10 percent of the above surface flow; no water drafting shall occur unless the RPF prepares a water drafting plan to be reviewed and, if necessary a streambed alteration agreement issued, by DFG and approved by the Director. The Director may accept the project description and conditions portion of an approved "Streambed Alteration Agreement" issued under the Fish and Game Code (F&GC 1600 et seq.) which is submitted instead of the water drafting plan described in 14 CCR § 916.9 [936.9, 956.9] (r)(2)(D)(1-5).

The water drafting plan shall include, but not be limited to:

1. disclosure of estimated percent streamflow reduction and duration of reduction,

2. discussion of the effects of single pumping operations, or multiple pumping operations at the same location,

3. proposed alternatives and discussion to prevent adverse effects (e.g. reduction in hose diameter, reduction in total intake at one location, described allowances for recharge time, and alternative water drafting locations),

4. conditions for operators to include an operations log kept on the water truck containing the following information: Date, Time, Pump Rate, Filling Time, Screen Cleaned, Screen Conditions, and Bypass flow observations,

5. a statement by the RPF for a pre-operations field review with the operator to discuss the conditions in the water drafting plan.

(3) Intakes shall be screened in Class I and Class II watercourses and lakes. Screens shall be designed to prevent the entrainment or impingement of all life stages of fish or amphibians. Screen specifications shall be included in the plan.

(4) Approaches to drafting locations within a WLPZ shall be treated in accordance with the provisions of 14 CCR § 916.9(f)(5) [936.9(f)(5), 956.9(f)(5).

~~**(f)**~~**(z)** The provisions of 14 CCR § 923.9 [943.9, 963.9] shall not apply to a plan that is subject to an incidental take permit based upon an approved Habitat Conservation Plan or Natural Community Conservation Plan that addresses ~~anadromous salmonid~~ protection of all listed anadromous salmonids within the planning watershed.

~~**(g)** This section shall expire on December 31, 2006.~~